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10/500,414	07/13/2006	Michael Braun	2000P16272WOUS	2277

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Siemens Corporation
Intellectual Property Department
170 Wood Avenue South
Iselin, NJ 08830

EXAMINER	
STEVENS, THOMAS H	

ART UNIT	PAPER NUMBER
2121	

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Please find below and/or attached an Office communication concerning this application or proceeding.

The time period for reply, if any, is set in the attached communication.

Office Action Summary	Application No.	Applicant(s)	
	10/500,414	BRAUN ET AL.	
	Examiner	Art Unit	
	THOMAS H. STEVENS	2121	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE *3* MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

1)☒ Responsive to communication(s) filed on *24 June 2004*.

2a)☐ This action is **FINAL**. 2b)☒ This action is non-final.

3)☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

4)☒ Claim(s) *9-28* is/are pending in the application.

4a) Of the above claim(s) _____ is/are withdrawn from consideration.

5)☐ Claim(s) _____ is/are allowed.

6)☒ Claim(s) *9-28* is/are rejected.

7)☐ Claim(s) _____ is/are objected to.

8)☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

9)☒ The specification is objected to by the Examiner.

10)☒ The drawing(s) filed on *24 June 2004* is/are: a)☐ accepted or b)☒ objected to by the Examiner.

Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).

Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).

11)☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

12)☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).

a)☒ All b)☐ Some * c)☐ None of:

1.☒ Certified copies of the priority documents have been received.

2.☐ Certified copies of the priority documents have been received in Application No. _____.

3.☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

1) ☒ Notice of References Cited (PTO-892)
2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
3) ☒ Information Disclosure Statement(s) (PTO/SB/08) Paper No(s)/Mail Date *06/24/2004*.
4) ☐ Interview Summary (PTO-413) Paper No(s)/Mail Date. _____.
5) ☐ Notice of Informal Patent Application
6) ☐ Other: _____.

DETAILED ACTION

1. Claims 1-8 were cancelled.

2. Claims 9-28 were examined.

Drawings

3. The drawings are objected to as failing to comply with 37 CFR 1.84(p)(5) because they include the following reference character(s) not mentioned in the description: element 20. Corrected drawing sheets in compliance with 37 CFR 1.121(d), or amendment to the specification to add the reference character(s) in the description in compliance with 37 CFR 1.121(b) are required in reply to the Office action to avoid abandonment of the application. Any amended replacement drawing sheet should include all of the figures appearing on the immediate prior version of the sheet, even if only one figure is being amended. Each drawing sheet submitted after the filing date of an application must be labeled in the top margin as either "Replacement Sheet" or "New Sheet" pursuant to 37 CFR 1.121(d). If the changes are not accepted by the examiner, the applicant will be notified and informed of any required corrective action in the next Office action. The objection to the drawings will not be held in abeyance.

Specification

4. The disclosure is objected to because of the following informalities: typographical error, pg.6, paragraph 0019, line 6, word after "the parameters for". Appropriate correction is required.

Claim Objections

5. The examiner has provided a number of claim deficiency examples; however, the list of deficiencies may not be inclusive. Applicant should refer to these as examples of deficiencies and should make all necessary corrections to eliminate the claim objections.

- Claim 11, line 2, "the data type"; possible antecedent issue
- Claim 12, lines 2-3 "means and/or defines"; not in 112 6th format i.e., "means for" if intended
- Claim 15, line 3, "the new parameter"; suggestion: a new parameter
- Claim 15, line 4, "the allowed range"; suggestion: an allowed range
- Claim 18, line 3, "the new parameter"; suggestion: a new parameter
- Claim 19, line 3, "the new parameter"; suggestion: a new parameter
- Claim 20, line 3, "the new parameter"; suggestion: a new parameter
- Claim 24, line 2, "the storage mechanism"; suggestion: a storage mechanism
- Claim 25, line 7, "the characteristic"; suggestion: characteristics
- Claim 25, line 9, "the control equipment"; suggestion: control equipment
- Claim 26, line 4, "the data type"; suggestion: data type
- Claim 27, line 4, "storage means"; not in 112 6th format i.e., "means for" if intended

All claims have been treated on their merits.

Claim Rejections - 35 USC § 112

6. The following is a quotation of the first paragraph of 35 U.S.C. 112:

> The specification shall contain a written description of the invention, and of the manner and process of making and using it, in such full, clear, concise, and exact terms as to enable any person skilled in the art to which it pertains, or with which it is most nearly connected, to make and use the same and shall set forth the best mode contemplated by the inventor of carrying out his invention.

7. Claims 27 and 28 rejected under 35 U.S.C. 112, first paragraph, as failing to comply with the written description requirement. The claim(s) contains subject matter which was not described in the specification in such a way as to reasonably convey to one skilled in the relevant art that the inventor(s), at the time the application was filed, had possession of the claimed invention. The "first and second analysis facility" is neither directly or implicitly outlined in the disclosure.

8. The following is a quotation of the second paragraph of 35 U.S.C. 112:

> The specification shall conclude with one or more claims particularly pointing out and distinctly claiming the subject matter which the applicant regards as his invention.

9. Claims 9-28 are rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention.

10. Claim 12 recites the limitation "the storage" in line 2. There is insufficient antecedent basis for this limitation in the claim.

11. Claim 15 recites the limitation "the access module" in line 2. There is insufficient antecedent basis for this limitation in the claim.

12. Claim 16 recites the limitation "the set of allowed values" in line 2. There is insufficient antecedent basis for this limitation in the claim.

13. Claim 16 recites the limitation "the permissible range" in line 3. There is insufficient antecedent basis for this limitation in the claim.

14. Claim 17 recites the limitation "the storage mechanism" in line 2. There is insufficient antecedent basis for this limitation in the claim.

15. Claim 18 recites the limitation "the access module" in line 2. There is insufficient antecedent basis for this limitation in the claim.

16. Claim 20 recites the limitation "the allowed range" in line 4. There is insufficient antecedent basis for this limitation in the claim.

17. Claim 28 recites the limitation "the allowed value range" in line 3. There is insufficient antecedent basis for this limitation in the claim.

Claim Rejections - 35 USC § 102

18. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

> A person shall be entitled to a patent unless –
>
> (b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

19. Claims 9-14,17,23-28 are rejected under 35 U.S.C. 102(b) as being anticipated by Nixon et al., (US Patent 5,909,368; hereafter Nixon). Nixon discloses a process controller (abstract).

Claim 9. An automated (field bus devices automatically perform the downloaded portions of the overall strategy; column 4, lines 45-51) method for generating program modules (columns 13-14, lines 43-67 and 1-7, respectively)for controlling field devices (abstract, line 3), from a machine-readable parameterized description (defined as a text form, figure 3, element 15 in spec pg. 12, paragraph 0030 which could be a template; figure 1C element 124)of field devices (abstract, line 3), wherein the description is used by a control unit for controlling the field devices (abstract, line 3), the method comprising: providing control equipment (spec. is not clear what the control equipment is; column 13, lines 14-16) for the field devices (abstract, line 3), wherein the control equipment (spec. is not clear what the control equipment is; column 13, lines 14-16) comprises at least one microprocessor (inside a computer, figure 1A, element 2), at least one electronic storage (i.e., ROM, figure 1B, element 4), data input and output mechanisms for communicating with the control unit ("control network", column 17, lines 14-67); identifying the parameters (columns 14-15 "table I", function blocks)of the field device, being in the description; identifying characteristics of the parameters (columns 14-15 "table I", function blocks)relevant for control purposes (e.g., a control strategy, column 5, lines 5-7); and generating program modules (columns 13-14, lines 43-67 and 1-7, respectively)for the control equipment (spec. is not clear what the control equipment is; column 13, lines 14-16) of the field device, which can be executed by the field device's microprocessor (inside a computer, figure 1A, element 2) and which are

based, at least partially, on the identified parameters (columns 14-15 "table I", function blocks)and/or the characteristics of the parameters (columns 14-15 "table I", function blocks) which have been identified as relevant for control purposes (e.g., a control strategy, column 5, lines 5-7).

Claim 10. A method in accordance with claim 9, wherein the control equipment (spec. is not clear what the control equipment is; column 13, lines 14-16) comprises at least one electronic storage (i.e., ROM, figure 1B, element 4) data input and output means for communications ("control network", column 17, lines 14-67) with the control unit.

Claim 11. A method in accordance with claim 9, wherein the identifying characteristics of the parameters (columns 14-15 "table I", function blocks)relevant for control purposes (e.g., a control strategy, column 5, lines 5-7) step comprises parameters (columns 14-15 "table I", function blocks)regarding the data type, size, allowed values or allowed value range.

Claim 12. A method in accordance with claim 9, wherein for at least one parameter a declaration module is generated, which reserves for the parameter (columns 14-15 "table I", function blocks) certain segments of the storage means ("data storage", column 16, line 20) and/or defines its data type and/or its size, where the storage segment reserved, the data type and/or the size correspond to the identified characteristics of the parameter (columns 14-15 "table I", function blocks).

Claim 13. A method in accordance with claim 12, wherein for at least one parameter an access module is generated, which regulates accesses by the control equipment (spec. is not clear what the control equipment is; column 13, lines 14-16) to the storage segment ("data storage", column 16, line 20) defined for the parameter(columns 14-15 “table I”, function blocks) in the declaration module.

Claim 14. A method in accordance with claim 9, wherein for at least one parameter (columns 14-15 “table I”, function blocks) a cross-referencing module is generated, which instructs the control equipment (spec. is not clear what the control equipment is; column 13, lines 14-16) to execute other program modules (columns 13-14, lines 43-67 and 1-7, respectively) when there is an access to the parameter (columns 14-15 “table I”, function blocks).

Claim 17. A method in accordance with claim 9, wherein for at least one parameter(columns 14-15 “table I”, function blocks) a naming module is also generated, which stores on the storage mechanism (“data storage”, column 16, line 20) a name for the parameter, and makes it possible to access the parameter (columns 14-15 “table I”, function blocks)under this name.

Claim 23. A method in accordance with claim 12, wherein for at least one parameter (columns 14-15 "table I", function blocks) a naming module is also generated, which stores on the storage mechanism ("data storage", column 16, line 20) a name for the parameter, (columns 14-15 "table I", function blocks) and makes it possible to access the parameter under this name.

Claim 24. A method in accordance with claim 13, wherein for at least one parameter (columns 14-15 "table I", function blocks)a naming module is also generated, which stores on the storage mechanism ("data storage", column 16, line 20) a name for the parameter, and makes it possible to access the parameter (columns 14-15 "table I", function blocks)under this name.

Claim 25. An automated (field bus devices automatically perform the downloaded portions of the overall strategy; column 4, lines 45-51) method for generating, from a machine-readable description of field devices (abstract, line 3), program modules (columns 13-14, lines 43-67 and 1-7, respectively)for controlling field devices (abstract, line 3), which are used on a control unit for the purpose of controlling the field devices (abstract, line 3), where each of the field devices (abstract, line 3) incorporates control equipment (spec. is not clear what the control equipment is; column 13, lines 14-16) with a microprocessor (inside a computer, figure 1A, element 2), with a storage mechanism ("data storage", column 16, line 20) and with data input and output

mechanisms for communicating with the control unit ("control network", column 17, lines 14-67), the method comprising: identifying the parameters (columns 14-15 "table I", function blocks)of the field device, comprised in the description; for each of the parameters, identifying the characteristics relevant for control purposes (e.g., a control strategy, column 5, lines 5-7); and generating program modules (columns 13-14, lines 43-67 and 1-7, respectively)for the control equipment (spec. is not clear what the control equipment is; column 13, lines 14-16) of the field device, to be executed by the field device's microprocessor (inside a computer, figure 1A, element 2) and which are based, at least partially, on the identified parameters (columns 14-15 "table I", function blocks)and/or the characteristics of the parameters (columns 14-15 "table I", function blocks)which have been identified as relevant for control purposes (e.g., a control strategy, column 5, lines 5-7).

Claim 26. A method in accordance with claim 25, further comprising: generating for at least one parameter a declaration module, which reserves for the parameter segments of the storage mechanism ("data storage", column 16, line 20) and/or defines its data type and/or its size, wherein the storage ("data storage", column 16, line 20) segment reserved, the data type and/or the size correspond to the identified characteristics of the parameter (columns 14-15 "table I", function blocks).

Claim 27. A device for generating control modules (columns 13-14, lines 43-67 and 1-7, respectively)for field devices (abstract, line 3), from a machine-readable parameterized

description (defined as a text form, figure 3, element 15 in spec pg. 12, paragraph 0030 which could be a template; figure 1C element 124)of the field devices (abstract, line 3), for use on control units for remote control of field devices (abstract, line 3), wherein each of the field devices (abstract, line 3) has control equipment (spec. is not clear what the control equipment is; column 13, lines 14-16) with at least one microprocessor (inside a computer, figure 1A, element 2), with at least one electronic storage (i.e., ROM, figure 1B, element 4) means and with data input and output mechanisms for communicating with the control units ("control network", column 17, lines 14-67), the device comprising: input equipment for reading in and storing the description; a first analysis mechanism (not clearly disclosed within the disclosure, see 112 1st above)for identifying the parameters (columns 14-15 "table I", function blocks)of the field device being in the description; a second analysis mechanism (not clearly disclosed within the disclosure, see 112 1st above)for identifying the characteristics of the parameters (columns 14-15 "table I", function blocks)defined in the description as relevant for control purposes (e.g., a control strategy, column 5, lines 5-7); and a generation mechanism which, for at least one of the parameters (columns 14-15 "table I", function blocks)identified in the first analysis facility, generates at least one program module, which can be executed on the field device's microprocessor (inside a computer, figure 1A, element 2).

Claim 28. A device in accordance with claim 27, wherein the generation mechanism generates: a declaration module which, for the parameter concerned, defines certain

segments of the storage means, ("data storage", column 16, line 20) its data type, its size and/or the set of allowed values or the allowed value range, as applicable, and/or an access module which, for the parameter (columns 14-15 "table I", function blocks)concerned, controls accesses by the control equipment (spec. is not clear what the control equipment is; column 13, lines 14-16) to the storage segment defined in the declaration module, and which can instruct the control equipment (spec. is not clear what the control equipment is; column 13, lines 14-16) to execute other program modules (columns 13-14, lines 43-67 and 1-7, respectively)when it accesses the parameter.

Claim Rejections - 35 USC § 103

20. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

> (a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negatived by the manner in which the invention was made.

21. The factual inquiries set forth in *Graham* **v.** *John Deere Co.*, 383 U.S. 1, 148 USPQ 459 (1966), that are applied for establishing a background for determining obviousness under 35 U.S.C. 103(a) are summarized as follows:

1. Determining the scope and contents of the prior art.
2. Ascertaining the differences between the prior art and the claims at issue.
3. Resolving the level of ordinary skill in the pertinent art.
4. Considering objective evidence present in the application indicating obviousness or nonobviousness.

22. Claims 15,16,18-22 are rejected under 35 U.S.C. 103(a) as being unpatentable over Nixon in view of Blevins et al., (US Patent 6,445,963; hereafter Blevins). Claims 15-22 teaches the limitations as set forth above accept the limitation of a control unit does not lie within the set of allowed values or lies outside the permissible range, as applicable to which Blevins teaches

Per claims 15,16,18-22 Blevins teaches

- checks whether the new parameter value lies within the set of allowed values or within the allowed range, as applicable (section discusses the parameter limits via the module control loop, column 9, lines 10-48, in particular lines 25-40)

At the time of invention it would have been obvious to one of ordinary skill in the art to modify Nixon by way of Blevins because Blevins teaches a method to generate a process model and without having to reprogram a control routine to implement model predictive or other advanced control. As a result, this method saves time, costs and provides use of the created process model for other purposes, such as for simulation and the production of virtual process outputs within the process control environment.

Conclusion

23. The prior art made of record and not relied upon is considered pertinent to applicants' disclosure:

- US Patent 4,319,338 discloses an industrial communications network includes microprocessor-based interface circuits which each connect a controller such as a programmable controller to a high speed serial data link.

- US Patent 4,935,863 discloses a configuration and parameter setting information relevant to the process to be controlled is supplied to the various units by means of a console connected to the connecting unit

- US Patent 5,398,336 discloses an object-oriented architecture for a factory floor management software system is described in which factory floor entities are modeled as factory objects within a relational database.

- US Patent 5,960,214 discloses a field device management system includes an interface which provides communication between a software application implemented on the system and a set of smart field devices coupled to the system.

- US Patent 6,298,377 discloses a management of field devices in industrial process systems.

- US Patent 6,459,938 discloses a control terminal includes an individual address setting section for setting a unique individual address, and a simultaneous control address setting section for setting a simultaneous control address common to the plurality of control terminals.

- US Patent 7,072,987 discloses a method that improves operating convenience and extends the application options for operating and observation systems

- Schickhuber et al., "Distributed Fieldbus and Control Network Systems" IEEE 1997 pg. 21-32:

  discloses a centralized fieldbus system.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Mr. Tom Stevens whose telephone number is 571-272-3715.

If attempts to reach the examiner by telephone are unsuccessful, please contact examiner's supervisor Mr. Albert Decady (571-272-3819). The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see http://pair-direct.uspto.gov.. Answers to questions regarding access to the Private PAIR system, contact the Electronic Business Center (EBC) (toll-free (866-217-9197)).

/Albert DeCady/
Supervisory Patent Examiner, Art Unit 2121